1. An apparatus for determining an optical property of a device under test – DUT –, comprising

   a delay unit adapted for providing a composite signal comprising superimposed signals delayed with respect to each other, and

   a first determination unit adapted for determining the optical property of the DUT from a detected DUT response signal, or a signal derived therefrom, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom.

2. The apparatus of claim 1, wherein the delay unit is adapted for deriving the superimposed signals from an incident optical signal.

3. The apparatus of claim 2, further comprising a tunable light source, preferably a tunable laser source, for providing the incident optical signal.

4. The apparatus of claim 1, wherein the delay unit comprises:

   a beam splitting unit adapted for splitting the incident optical signal into at least two optical signals comprising a first optical signal and a second optical signal;

   at least two different light paths adapted for delaying said optical signals with respect to each other, in order to obtain at least two delayed signals;

   a beam-combining unit for forming the composite signal by superimposing said delayed signals.

5. The apparatus of claim 1, wherein said DUT response signal is at least one of: an optical signal transmitted through said DUT, and an optical

signal reflected by said DUT.

6. The apparatus of claim 1, further comprising a second determination unit, whereby said first determination units is adapted to detect an optical signal transmitted through said DUT, and whereby said second determination unit is adapted to detect an optical signal reflected by said DUT, or vice versa.

7. The apparatus of claim 1, wherein the optical property is determined by analyzing an interference pattern of said DUT response signal.

8. The apparatus of claim 1, wherein the optical property is at least one of a group comprising phase properties of the DUT or loss or gain properties respectively of the DUT.

9. The apparatus of claim 1, wherein said incident optical signal is swept in frequency with a predefined sweep speed over a frequency tuning range.

10. The apparatus of claim 1, wherein a frequency separation Δf between said delayed signals is varied by varying a sweep speed for sweeping the incident optical signal in frequency.

11. The apparatus of claim 1, wherein at least one of said light paths comprises at least one of:

    a variable delay line for varying a frequency separation Δf between said delayed signals, and

    a polarization controller for adjusting a polarization of at least one of said delayed signals.

12. The apparatus of claim 1, wherein a first interference pattern is detected for a first frequency separation Δf_1 between said delayed signals, and wherein a second interference pattern is detected for a second frequency

separation Δf_2 between said delayed signals.

13. The apparatus of claim 1, further comprising a reference determination unit for performing a reference measurement of said composite signal, or of a signal derived therefrom.

14. The apparatus of claim 1, wherein a frequency separation Δf between said delayed signals is determined by analyzing a reference interference pattern of said composite signal, or of a signal derived therefrom.

15. The apparatus of claim 1, further comprising an optical modulator adapted for modulating said composite signal, or said DUT response signal, or a signal derived from said signals, with an external frequency.

16. The apparatus of claim 3, wherein

said first beam splitting unit splits the light of said tunable light source into at least three optical signals comprising said first optical signal, said second optical signal and a third optical signal,

whereby the light path of said first optical signal comprises a polarization controller that sets the polarization of said first optical signal to first polarization state, and

whereby the light path of said third optical signal comprises a polarization controller that sets the polarization of said third optical signal to a second polarization state.

17. The apparatus of claim 1, wherein said first determination unit comprises a polarization diversity receiver adapted for detecting an interference pattern in dependence on the state of polarization of said DUT response signal, or of a signal derived therefrom.

18. A method for determining an optical property of a device under test – DUT –, comprising the following steps:

providing a composite signal by superimposing signals delayed with respect to each other;

detecting a DUT response signal, wherein the DUT response signal represents a signal response of the DUT in response to the composite signal or a signal derived therefrom, and

determining the optical property of the DUT from the detected DUT response signal or a signal derived therefrom.

19. The method of claim 18, comprising the steps of:

splitting an incident signal into at least two optical signals comprising a first optical signal and a second optical signal;

individually delaying said optical signals via at least two different light paths in order to obtain said delayed signals.

20. The method of claim 18, further comprising a step of sweeping the frequency of an incident signal over a frequency tuning range.

21. The method of claim 18, further comprising the step of repeating at least once the measurement with a different state of polarization of the superimposed signal.